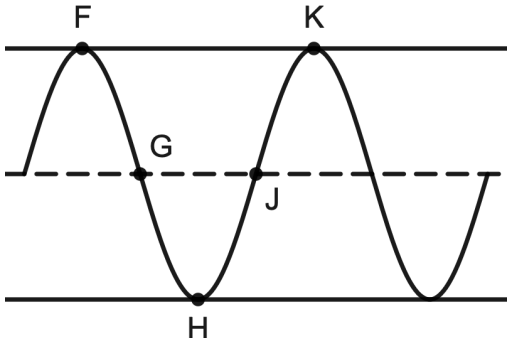# FRQ #3: Modeling a Periodic Context

What can I expect?	What should I know and be able to do?

• No calculator
• Verbal description of a sinusoidal function in a real-world context
• Most scripted of all the FRQs
	• Extract info about _____, _____, _____ and _____ from a context.
	
	*Look for information about:
	
	   ○ _____ value
	
	   ○ _____ value
	
	   ○ Time it takes to complete one
	
	   _____

(A) Determine coordinates of 5 labeled points. 	• Understand how graph features are related to values of parameters. $|a| =$ $d =$
(B) Solve for parameters of sinusoidal function. $$h(t) = a\sin\big(b(t+c)\big) + d$$ or $$h(t) = a\cos\big(b(t+c)\big) + d$$	$\frac{2\pi}{b} =$ $c =$

(C) i) **Multiple choice:** Given an interval
   a. h is positive and increasing.
   b. h is positive and decreasing.
   c. h is negative and increasing.
   d. h is negative and decreasing.
 	
ii) On that given interval, describe how the rate of change of h is changing.
	• Meaning of positive/negative values and increasing/decreasing behavior of a function
	• Rate of change is changing ⟹_____
	
	   ○ Concave up →
	
	   ○ Concave down →

AP Exam Tips:

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